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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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WOLF GREENFIELD & SACKS, PC
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 02210-2211

EXAMINER

KIM, PAUL D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 05/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,420

Applicant(s)

GRACIAS ET AL.

Examiner

Paul D Kim

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 10-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This office action is a response to the restriction requirement field on 2/3/2003.

Election/Restrictions

2. Applicant's election with traverse of Group I, claims 1-9, in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the restriction should not be made if a single search and examination could be performed. This is not found persuasive because the article of Group II as claimed can be made by another and materially different process such as without assembling in a non-planar arrangement of components. Also, these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore **made FINAL**.

3. Claims 10-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the

list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

5. The informal drawings are not of sufficient quality to permit examination. Accordingly, new drawings are required in reply to this Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit new drawings will result in **ABANDONMENT** of the application.

Specification

6. The abstract of the disclosure is objected to because the abstract does not sufficiently describe the claimed invention. Correction is required. See MPEP § 608.01(b).

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

8. Claim 1 is objected to because of the following informalities:

Re. Claim 1: The limitation "component" in line 1 should be --components--.

Re. Claim 8: The limitation "electrical communication" in line 3 should be --the electrical communication--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re. Claim 1: The limitation "the direction" in line 3 lacks antecedent basis.

Re. Claim 8: The limitation "electrical conductor" in line 2 renders vague and indefinite. It is unclear whether this electrical conductor is the same in line 2 of claim 7 or a new electrical conductor.

Also, the limitation "an electrical circuit" in line 4 renders vague and indefinite. It is unclear whether this electrical circuit is the same in line 4 of claim 1 or a new electrical circuit.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Bowden et al. (US PAT. 6,507,989).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1 Bowden et al. teach a method of self-assembly of mesoscale object comprising step of: allowing a the first, second, third and forth of components (90,94,102 of Fig. 4 or 140 of Fig. 5) in a non-planar arrangement of component and forming at least one electrical circuit that traverses at least a portion of the first, second, third and forth components (col. 1, line 18 to col. 10, line 16).

As per claim 2 Bowden et al. also teach that the first, second, third and forth components to assemble under a set conditions to form an interconnection assembly (col. 2, lines 61-65).

As per claim 3 Bowden et al. also teach that the first, second, third and forth components includes a mating surface that matches a mating surfaces of at least one other of e first, second, third and forth components (col. 2, lines 43-49).

As per claim 4 Bowden et al. also teach that the allowing the first, second, third and forth of components (90,94,102 of Fig. 4 or 140 of Fig. 5) in a non-planar arrangement of component and forming at least one electrical circuit that traverses at least a portion of the first, second, third and forth components (col. 1, line 18 to col. 10, line 16).

As per claim 5 Bowden et al. also teach that the first, second, third and forth of components undergo random contact interaction with each other until the non-planar arrangement of component is formed as shown in Fig. 5 and 10C (col. 4, lines 32-38).

As per claim 6 Bowden et al. also teach that each mating surface of the first, second, third and forth of components is matched with the other mating surfaces in a fluid such as in water (col. 10, lines 1-4).

As per claims 7 and 8 Bowden et al. also teach that each of the first, second, third and forth of components is electrically connected by an electrical conductor (114) to form an electrical circuit as shown in Fig. 4 (col. 8, line 53 to col. 9, line 45).

As per claim 9 Bowden et al. also teach that the first mating surface is allow to fasten to the second mating surface in a manner that is irreversible under the set condition (col. 2, lines 61-65).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith et al. (US PAT. 5,545,291), Sliwa Jr. (US PAT. 5,075,253), and Birks

et al. (US PAT. 4,016,456) are cited to further show the state of the art with respect to method of self-assembling structures.


Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5648.

pdk
May 27, 2003



PETER VO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700